

10/721,232

REMARKS

The following is a response to the Office Action dated April 20, 2007. Claims 1-24 are currently pending. Applicant appreciates the Examiner's indication of allowable subject matter. Reconsideration of this application is respectfully requested in view of the remarks below.

35 U.S.C. § 112, Second Paragraph, Rejection

Claims 8, 12-14 and 21-24 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite. The Office Action alleges that there is an omission of essential steps amounting to a gap between steps, stating that the omitted steps are the relationship between the machining, finishing or coating steps and the preceding measurement and determination steps (Office Action at p. 3). The Office Action further alleges that these claims "suffer from clarity issues" on grounds that the physical steps recited are not described in relationship to the measurement or calculation made and that it is unclear how these steps relate to other steps in the parent claims (Office Action at p. 2). This rejection is respectfully traversed.

As an initial matter, the examiner appears to have misconstrued the directives of MPEP 2172.01. This section states:

A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112, first paragraph, as not enabling. In re Mayhew, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). See also MPEP § 2164.08(c). Such essential matter may include missing elements, steps or necessary structural cooperative relationships of elements described by the applicant(s) as necessary to practice the invention.

In addition, a claim which fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention. See In re Venezia, 530 F.2d 956, 189 USPQ 149 (CCPA 1976); In re Collier, 397 F.2d 1003, 158 USPQ 266 (CCPA 1968). >But see Ex parte Nolden, 149 USPQ 378, 380 (Bd. Pat. App. 1065). (MPEP 2172.01, Emphasis added.)

10/721,232

Thus, as plainly indicated in MPEP 2172.01, the examiner must look to the specification or Applicant's statements of record for statements about interrelating essential elements in making this type of rejection. The examiner has not done this, and has clearly not met the required burden in advancing this rejection because the examiner has identified no statements or disclosure by the Applicant that would warrant the rejection. Indeed, the rejection is also improper because the subject matter recited in the dependent claims is not essential – one can practice the subject matter of the independent claims without practicing the subject matter of the dependent claims.

In addition, MPEP 2172.01 further indicates that the type of interrelationship sought by the examiner may not be necessary:

("[I]t is not essential to a patentable combination that there be interdependency between the elements of the claimed device or that all the elements operate concurrently toward the desired result"); *Ex parte Huber*, 148 USPQ 447, 448-49 (Bd. Pat. App. 1965) (A claim does not necessarily fail to comply with 35 U.S.C. 112, second paragraph where the various elements do not function simultaneously, are not directly functionally related, do not directly intercooperate, and/or serve independent purposes.). (MPEP 2172.01.)

Thus, in the absence of conditions set forth in the first quotation from MPEP 2172.01 above, there is simply no proper basis for the rejection.

Moreover, claims 8, 12-14 and 12-24 are clear on their faces, and one of ordinary skill in the art would readily understand what is being claimed. For example, claim 8 recites, "The method according to claim 1, further comprising: applying an anti-reflective coating to the aspherical surface of the aspherical lens." There is nothing unclear about the subject matter recited in claim 8 – it requires applying an anti-reflective coating to the aspherical surface, for which there is antecedent basis in claim 1. There is no need to recite in claims 8, 12-14 and

10/721,232

12-24 any relationship between the subject matter recited therein and the measurement or calculation reflected in the respective parent claim.

For at least these reasons, withdrawal of the 35 U.S.C. 112, second paragraph, rejection is respectfully requested.

35 U.S.C. § 101 Rejection

Claims 1-5, 8 and 12-24 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. This rejection is respectfully traversed. In response to the arguments presented in the prior Amendment, the Office Action states:

The final result of the claimed invention is the determination of surface deviations. As such, the final result is a number. Although the number may be representative of a real world property, the result is simply a number and not a practical application of a number. Until this number is claimed as used in a practical application or claimed so that the number is made available in such a manner that its usefulness in is disclosed practical application can be realized, it cannot be said to be tangible. . . . As such, the claims are not directed to a practical application of the calculation, but rather solely to the mathematical operations and are therefore nonstatutory.” (Office Action at pp. 2-3.)

It is respectfully submitted that 1-5, 8 and 12-24 are properly directed to statutory subject matter and that the examiner has applied an improper analysis in evaluating subject matter eligibility. In evaluating subject matter eligibility, the Interim Guidelines on Patent Eligible Subject Matter direct the examiner to determine whether the claimed invention falls within a judicial exception (laws of nature, natural phenomena, and abstract ideas) (MPEP 2106 (IV)(C)). In this instance, the examiner has not explicitly stated which judicial exception supposedly applies, but from the examiner's reference to “mathematical operations”, it is believed that the examiner views the claimed invention as being directed to an abstract idea. When it is believed that a claimed invention is directed to a judicial

10/721,232

exception (such as an abstract idea), the Interim Guidelines direct the examiner to determine whether the claimed invention is directed to a practical application of the judicial exception, since such a practical application may qualify as eligible subject matter (MPEP 2106 (IV)(C)(1)). According to the Interim Guidelines, a claimed invention is directed to a practical application if it either transforms an article or physical object to a different state or thing, or otherwise produces a useful, concrete, and tangible result (MPEP 2106 (IV)(C)(2)). As noted by the examiner, the Interim Guidelines state with regard to making the latter determination, “[T]he focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather on whether the final result achieved by the claimed invention is ‘useful, tangible, and concrete.’” (MPEP 2106 (IV)(C)(2)). In this instance, the examiner errs in applying an improper and overly restrictive analysis of whether the claimed invention achieves a result that is “useful, tangible, and concrete.”

In view of the examiner’s comments quoted above, the examiner appears to believe that, in order for a claimed invention to achieve a “tangible result,” the tangible result *must be recited in the claim*. This is evident by implication from the examiner’s above-quoted comments which complain the final result of the claimed invention is merely a determination of surface deviations – a number (i.e., the examiner is only looking at the claim language and not at what the claimed invention as a whole achieves). Such a test is improper and contrary to legal precedent. Even the Interim Guidelines state, “[T]o be eligible for patent protection the claimed invention *as a whole must accomplish* a practical application. That is, *it must produce* a ‘useful, concrete and tangible result.’” (Interim Guidelines of 22 November 2005, first paragraph, citing *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 at 1373-74 (Fed. Cir. 1998), emphasis added.) As noted above the Interim

Guidelines also indicate that “[T]he focus is . . . on whether the *final result achieved* by the

10/721,232

claimed invention is “useful, tangible, and concrete” (MPEP 2106 (IV)(C)(2), emphasis added). The examiner appears to have reformed the words “accomplish,” “produce,” and “achieved” from the Interim Guidelines to mean that the claim must *recite* a tangible result and appears to have ignored the directive that the *claimed invention as a whole* be considered. That approach is simply incorrect. The Interim Guidelines do not direct the examiner to determine whether the claim *recites a tangible result*, and neither does legal precedent.

Legal precedent makes clear that the examiner is applying an improper analysis. For example, in *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994), the Federal Circuit reversed a decision by the Board of Patent Appeals and Interferences (“the Board”) and held that Alappat’s claimed invention to a rasterizer for converting vector list data representing sample magnitudes of an input waveform into anti-aliased pixel illumination intensity data to be displayed on a display means was indeed statutory under 35 U.S.C. §101. Even though the claim at issue (claim 15) was directed to a machine, the Board argued that the claimed subject matter fell within a judicial exception as being directed to elements that merely carried out a mathematical algorithm. (*Id.* at 1542.) The Federal Circuit rejected that contention, noting that claim 15 was directed to a combination of elements for performing a combination of calculations “to transform, i.e., rasterize, digitized waveforms (data) into anti-aliased, pixel illumination data *to produce a smooth waveform*.” (*Id.* at 1544, emphasis added.) Importantly, the claim at issue *did not recite the result of* “*a smooth waveform*,” yet the court understood that the claimed invention as a whole produced that result in light of the description of the invention being claimed.¹ Indeed, the Federal Circuit in *AT&T Corp. v.*

¹ Claim 15 in Alappat’s US Patent Application No. 07/149,792 read:

A rasterizer for converting vector list data representing sample magnitudes of an input waveform into anti-aliased pixel illumination intensity data to be displayed on a display means

10/721,232

Excel Communications, Inc., 172 F.3d 1352 (Fed. Cir. 1999) explicitly commented on this aspect of *Alappat* in stating, "In *Alappat*, we held that more than an abstract idea was claimed because the claimed invention as a whole was directed toward forming a specific machine that produced the useful, concrete, and tangible result of a smooth waveform display." (*Id.* at. 1357.) Again, the claim did not recite the result of producing or displaying "a smooth waveform." Thus, the examiner's failure to look beyond the explicit claim language for what the claimed invention as a whole achieves and the examiner's apparent requirement in the present instance that the claims themselves should recite a tangible result is contrary to legal precedent.

Should the examiner think that *Alappat* is distinguishable from the present matter simply because the claims at issue in *Alappat* were apparatus claims whereas the present claims at issue are method claims, it is respectfully pointed out that the Federal Circuit has already spoken to the contrary. For example, in *AT&T*, the Federal Circuit stated:

Whether stated implicitly or explicitly, we consider the scope of § 101 to be the same regardless of the form - machine or process - in which a particular claim is drafted. See, e.g., *In re Alappat*, 33 F.3d at 1581, 31 USPQ2d at 1589 (Rader, J., concurring) ("Judge Rich, with whom I fully concur, reads *Alappat*'s application as claiming a machine. In fact, whether the invention is a process or a machine is irrelevant. The language of the Patent Act itself, as well as Supreme Court rulings, clarifies that *Alappat*'s invention fits comfortably within 35 U.S.C. § 101 whether viewed as a process or a machine."); *State Street*, 149 F.3d at 1372, 47 USPQ2d at 1600 ("[F]or the purposes of a § 101 analysis, it is of little relevance whether claim 1 is directed to a 'machine' or a 'process,'....").

Furthermore, the Supreme Court's decisions in *Diehr*, *Benson*, and *Flook*,

(continued...)

(a) means for determining the vertical distance between the endpoints of each of the vectors in the data list;

(b) means for determining the elevation of a row of pixels that is spanned by the vector;

(c) means for normalizing the vertical distance and elevation; and

(d) means for outputting illumination intensity data as a predetermined function of the

10/721,232

all of which involved method (i.e., process) claims, have provided and supported the principles which we apply to both machine-- and process-type claims. Thus, *we are comfortable in applying our reasoning in Alappat and State Street to the method claims at issue in this case.* (172 F.3d at 1357-58, emphasis added.)

Accordingly, the insights from the Federal Circuit's analysis in *Alappat* are indeed relevant to the matter at hand.

As another example, in *AT&T*, the Federal Circuit reversed the district court's judgment and held that claims of AT&T's US Patent No. 5,333,184 directed to a method in a telecommunications system involving generating a message record and including in the message record a primary interexchange carrier (PIC) indicator were statutory under 35 U.S.C. §101. Among the claims at issue in AT&T's US Patent No. 5,333,184 was independent claim 1, which read:

A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:

generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and

including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers. (*Id.* at 1354.)

In characterizing AT&T's claimed method, the Federal Circuit stated:

AT&T's claimed process employs subscribers' and call recipients' PICs as data, applies Boolean algebra to those data to determine the value of the PIC indicator, and applies that value through switching and recording mechanisms *to create a signal useful for billing purposes*. . . . It is clear from the written description of the '184 patent that AT&T is only claiming a process that uses the Boolean principle in order to determine the value of the PIC indicator. The PIC indicator represents information about the call recipient's PIC, *a useful, non-abstract result that facilitates differential billing* of long-distance calls made by an IXC's subscriber. (*Id.* at 1358, emphasis added.)

10/721,232

Thus, in arriving at its conclusion that AT&T's method claims were directed to statutory subject matter, the Court emphasized the *billing purpose* and the *facilitation of differential billing* of the claimed invention, which is clearly *not recited in claim 1* of AT&T's '184 patent. Thus, like *Alappat*, *AT&T* reflects that the proper inquiry for determining whether a claimed invention is statutory requires looking beyond the explicit language of the claims to evaluate what the claimed invention as a whole achieves. The examiner has not done that in the present instance.

As yet another example, the Court in *AT&T* looked the earlier guidance from the Federal Circuit in *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992), and noted that the *Arrhythmia* Court found the method claims at issue there qualified as statutory subject matter, even though claim language concluded with determining and comparing numbers. For example, method claim 1 at issue read:

A method for analyzing electrocardiograph signals to determine the presence or absence of a predetermined level of high frequency energy in the late QRS signal, comprising the steps of:
 converting a series of QRS signals to time segments, each segment having a digital value equivalent to the analog value of said signals at said time;
 applying a portion of said time segments in reverse time order to high pass filter means;
 determining an arithmetic value of the amplitude of the output of said filter; and
 comparing said value with said predetermined level. (958 F.2d at 1055.)

In commenting on the *Arrhythmia* Court's analysis, the *AT&T* Court stated:

The *Arrhythmia* court reasoned that the method claims qualified as statutory subject matter by noting that the steps transformed physical, electrical signals from one form into another form - *a number representing a signal related to the patient's heart activity, a non-abstract output*. See *id.*, 958 F.2d at 1059, 22 USPQ2d at 1038. The finding that the claimed process "transformed" data from one "form" to another simply confirmed that *Arrhythmia*'s method claims satisfied § 101 because the mathematical algorithm included within the process was applied to *produce a number*

10/721,232

which had specific meaning - a useful, concrete, tangible result - not a mathematical abstraction. See id. at 1060, 22 USPQ2d at 1039. (172 F.3d at 1359, emphasis added.)

Thus, again, the legal precedent reflects that the proper inquiry is to look beyond the explicit language of the claims to determine what the claimed invention as a whole achieves, and even indicates that a number with a particular meaning reflected in a claim can itself be a useful, concrete and tangible result.

As noted in the prior Amendment filed in the present application, the claimed invention as a whole is useful, tangible and concrete. A result of the methods recited in the independent claims is an optical element whose surface has been measured to determine its deviations from a target shape thereof. Thus, the claims recite useful subject matter at least because surface quality of the optical element has been determined. The result of the claimed methods - an optical element whose surface has been measured to determine its deviations from a target shape thereof - is also tangible and concrete. Certainly, an optical element is tangible and concrete. Moreover, the recited methods yield an optical element whose surface has been measured and qualified to determine the extent to which its surface deviates from target dimensions. This makes the result even further tangible and concrete at least because, for example, the optical element's now measured surface quality provides an indication of whether the optical element meets whatever design requirements may be required. In view of the discussion presented herein, it should be evident that it is not necessary for the claims of the present application to recite any more than is already recited in order to be considered statutory under 35 U.S.C. §101.

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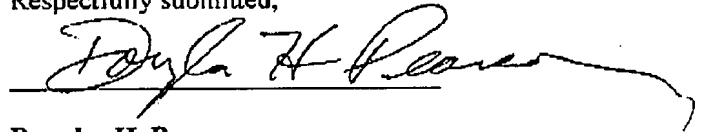
10/721,232

Conclusion

For at least the foregoing reasons, withdrawal of the rejection of claims 1-20 under 35 U.S.C. §101 and allowance of claims 1-24 is respectfully requested. Should there be any questions in connection with this application, the examiner is invited to contact the undersigned at the number below.

Date: September 20, 2007

Respectfully submitted,



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